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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,318	07/30/2001	Joo Yeol Lee	P-217	8002
34610	7590	06/30/2005	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			LEE, JOHN J	
			ART UNIT	PAPER NUMBER
			2684	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/916,318	Applicant(s) LEE, JOO YEOL	
	Examiner JOHN J LEE	Art Unit 2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 and 27-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11, 33 and 34 is/are allowed.
- 6) ☒ Claim(s) 12, 14-25, 27-32 and 35 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments/Amendment

1. Applicant's arguments/amendments received on March 8, 2005 have been carefully considered but they are not persuasive because the teaching of all the cited reference reads on all the rejected claims as set forth in the pervious rejection. Therefore, the finality of this Office Action is deemed proper.

Contrary to the assertions at pages 14 - 18 of the Arguments, claims 12, 15, 18, and 32 are not patentable.

During examination, the USPTO must give claims their broadest reasonable interpretation.

Re claim 12: Applicant argues that the combination of Kojima and Diepstraten do not teach the claimed invention "transmitting data through a digital baseband processor and a medium access controller to a WLAN transmitting processor". However, The Examiner respectfully disagrees with Applicant's assertion that the Kojima and Diepstraten do not teach the claimed invention. Contrary to Applicant's assertion, the Examiner is of the opinion that Kojima teaches the PHS terminal base station **inherently** has a processor (main controller) (without processor, the repeater does not work), and each of WLL transceiver section and WLAN transceiver section has a processing section for processing the signals, also it is well known that WLAN processor uses standard MAC frame includes a MAC preamble followed by a destination address is the address of the particular remote station for which this particular frame is included. Therefore, WLL base station transmits to the radio signal, and PHS terminal base station receives by WLL processing section and transmits

through main controller to WLAN transmitting processing section using MAC frame (see Fig. 2, 3 and column 5, lines 1 – 64), regarding the claimed limitation.

Re claim 15: Applicant argues that the combination of Kojima and Diepstraten do not teach the claimed invention “transmitting the data which has been subjected to a predetermined procedure in a WLAN receiving processor through a medium access controller (MAC) and a digital baseband processor to a WLL transmitting processor”. However, The Examiner respectfully disagrees with Applicant’s assertion. Contrary to Applicant’s assertion, the Examiner is of the opinion that Kojima teaches the PHS terminal base station **inherently** has a processor (main controller) (without processor, the repeater does not work), and each of WLL transceiver section and WLAN transceiver section has a processing section for processing the signals, also it is well known that WLAN processor uses standard MAC frame includes a MAC preamble followed by a destination address is the address of the particular remote station for which this particular frame is included. Therefore, WLAN terminal transmits to the radio signal, and PHS terminal base station receives by WLAN receiving processing section using MAC frame and transmits through main controller to WLL transmitting processing section and then transmits to the base station (see Fig. 2, 3 and column 5, lines 1 – 64), regarding the claimed limitation.

Re claim 18: Applicant argues that the combination of Kojima and Diepstraten do not teach the claimed invention “an antenna unit having the first antenna coupled to the WLL transceiver and the WLAN transceiver”. However, The Examiner respectfully disagrees with Applicant’s assertion. Contrary to Applicant’s assertion, the Examiner is of the opinion that Kojima teaches an antenna unit receives/transmits the radio signal from/to plurality of

WLAN terminals, and an antenna unit transmits/receives the radio signal to/from WLL base station, and the PHS terminal base station inherently has a processor (main controller) and each of WLL transceiver section and WLAN transceiver section has a processing section for processing the signals (see Fig. 2, 3 and column 5, lines 1 – 64), regarding the claim limitation.

Applicant's attention is directed to the rejection below for the reasons as to why this limitation is not patentable.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 12, 15, 17, 18, 20-25, 27-32, and 35** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima et al. (US Patent number 6,640,100) in view of Diepstraten et al. (US Patent number 5,410,738).

Regarding **claim 12**, Kojima discloses that a wireless local loop (WLL) - wireless local area network (WLAN) integrated transmitting and receiving method (Fig. 2, 3 and column 4, lines 59 – column 5, lines 65). Kojima teaches that transmitting a data from a WLL base station (7 in Fig. 2) and transmitting it to a WLL receiving processor (11 or 5 in Fig. 2) (Fig. 2, 3 and column 5, lines 26 – 64, where teaches a fixed terminal or PHS radio station controller or processor of fixed terminal includes WLL transceiver section for receiving/transmitting the radio signal from the WLL base station). Kojima teaches

that transmitting the data which has been subjected to a predetermined procedure in the WLL receiving processor through a digital baseband processor and a medium access controller (MAC) to a WLAN transmitting processor (Fig. 2, 3 and column 5, lines 1 – 64, where teaches the repeater **inherently** has a processor (main controller) (without processor, the repeater does not work) and each of WLL transceiver section and WLAN transceiver section has a processing section for processing the signals, also it is well known that WLAN processor uses standard MAC frame includes a MAC preamble followed by a destination address is the address of the particular remote station for which this particular frame is included). Kojima teaches that a WLAN transceiver section (9 in Fig. 2) adapted to connect to the plurality of WLAN terminals (12 in Fig. 2) to transmit and receive a radio signal to and from the plurality of WLAN terminals (Fig. 2, 3 and column 5, lines 26 – 64, where teaches a repeater or PHS radio station includes WLAN transceiver section for receiving/transmitting the radio signal from the WLAN terminals). Kojima teaches that transmitting the data, which has been subjected to a predetermined procedure in the WLAN transmitting processor to the WLAN terminal (Fig. 2, 3 and column 5, lines 1 – 64, where teaches a antenna unit of WLAN repeater station receives/transmits the radio signal from/to plurality of WLAN terminals (mobile station) with processing by WLAN processing section in the WLAN repeater to WLAN terminals).

Kojima does not exactly disclose the limitation “processor of either the WLL receiving processing through baseband processing or a MAC to the WLAN transmitting processing”. However, Diepstraten discloses the limitation “processor of either the WLL

receiving processing through baseband processing or a MAC to the WLAN transmitting processing” (Fig. 4, column 3, lines 61 – column 4, lines 51, where teaches the LAN station (repeater) has a processor that performs a WLAN transmitting/receiving processing (22 in Fig. 4) and other processor (24 in Fig. 4) as can be WLL receiving/transmitting processing for processing the radio signals). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Kojima system as taught by Diepstraten. Doing so would achieve enhancing controlling signal adaptability and the communication reliability in wireless communication system.

Regarding **claim 15**, Kojima and Diepstraten disclose the all the limitation, as discussed in claim 12. Furthermore, Kojima further discloses that transmitting a data from a WLAN terminal (12 in Fig. 2) and transmitting it to a WLAN receiving processor (8 or 5 in Fig. 2) (Fig. 2, 3 and column 5, lines 26 – 64, where teaches transmitting a data from mobile station through the controller or processor of repeater with terminal base station). Kojima teaches that transmitting the data, which has been subjected to a predetermined procedure in the WLL transmitting processor to the WLL base station (Fig. 2, 3 and column 5, lines 1 – 64, where teaches a antenna unit of WLL base station receives/transmits the radio signal from/to plurality of WLL terminals with processing by WLL processing section in fixed terminal).

Regarding **claim 17**, Kojima and Diepstraten disclose the all the limitation, as discussed in claim 12. Furthermore, Kojima further discloses that the data signal transmitted from the WLAN terminal is received through a first antenna and then is

transmitted through a duplex to the WLAN receiving processor (Fig. 3, 4 and column 5, lines 1 – column 6, lines 34, where teaches WLAN terminal (mobile station) transmits radio signal to mobile repeater by receiving/transmitting antenna).

Regarding **claim 18**, Kojima and Diepstraten disclose the all the limitation, as discussed in claim 12. Furthermore, Kojima further discloses that an antenna unit (7 in Fig. 2) having a first antenna coupled to the WLL transceiver (11 in Fig. 2) and to the WLAN transceiver (8 in Fig. 2) (column 4, lines 59 – column 5, lines 64, where teaches the antenna of the base station having coupled to the fixed base terminal and to the mobile repeater). Kojima teaches that a memory (not shown but inherently the repeater has a memory to store the data) storing data and instructions to enable the processing of data to conform to a WLL signaling scheme and to enable the processing of data to conform to a WLAN signaling scheme (column 4, lines 50 – column 5, lines 64 and Fig. 2, 3, where teaches judgment as to whether a call is generated by a fixed subscriber or mobile subscriber can easily to made referring to subscriber information prestored every time a call is made).

Regarding **claim 20**, Kojima and Diepstraten disclose the all the limitation, as discussed in claim 12. Furthermore, Kojima further discloses that the antenna unit includes a space diversity pair of antennas to reduce multipath fading and noise (Fig. 2, 3 and column 5, lines 1 – column 6, lines 34).

Regarding **claim 21**, Kojima and Diepstraten disclose the all the limitation, as discussed in claim 12. Furthermore, Kojima further discloses that a dual input channel coupled to a second antenna (Fig. 2, 3 and column 5, lines 1 – column 6, lines 34).

Regarding **claim 22**, Kojima and Diepstraten disclose the all the limitation, as discussed in claim 12. Furthermore, Kojima further discloses that a duplexer in the antenna unit, allowing the first antenna to serve as both the transmitting channel and as the receiving channel, according to the state of the duplexer (Fig. 2, 3 and column 5, lines 1 – column 6, lines 34).

Regarding **claims 23 and 28**, Kojima and Diepstraten disclose the all the limitation, as discussed in claim 12. Furthermore, Kojima further discloses that the WLL and WLAN transceiver comprises one or more of the elements from the group of AGC's, modulators, mixers, filters, D/A converters and power amplifiers (Fig. 2, 3 and column 5, lines 1 – 64).

Regarding **claims 24 and 29**, Kojima and Diepstraten disclose the all the limitation, as discussed in claim 12. Furthermore, Kojima further discloses that WLL and WLAN transceiver comprises one or more of the elements from the group of low noise amplifiers, AGC's, demodulators, mixers, filters, and A/D converters (Fig. 2, 3 and column 5, lines 1 – 64).

Regarding **claim 25**, Kojima and Diepstraten disclose the all the limitation, as discussed in claim 12. Furthermore, Kojima further discloses that a digital base band processor, which processes data such that the data conforms to a WLL signaling scheme (Fig. 2, 3 and column 5, lines 1 – 67).

Regarding **claim 27**, Kojima and Diepstraten disclose the all the limitation, as discussed in claims 12 and 22. Furthermore, Kojima further discloses that the antenna unit comprises two antennas with a duplexer and a triplexer to provide the appropriate

connections to the receiving channels and transmitting channels of the apparatus (Fig. 2, 3 and column 5, lines 1 – column 6, lines 34, where teaches PHS terminal base station has two antenna unit that a antenna unit provides receiving and transmitting from/to the base station, and other antenna unit provides receiving/transmitting from/to mobile or fixed station).

Regarding **claim 30**, Kojima and Diepstraten disclose the all the limitation, as discussed in claims 12 and 18.

Regarding **claim 31**, Kojima and Diepstraten disclose the all the limitation, as discussed in claims 12 and 18. Furthermore, Kojima further discloses that the medium access controller is further equipped to process the digital data for transfer to or from WLL transceiver (Fig. 2, 3 and column 5, lines 1 – 64).

Regarding **claim 32**, Kojima and Diepstraten disclose the all the limitation, as discussed in claims 12 and 18. Furthermore, Kojima further discloses that a single apparatus (antenna) for transferring data from the WLL base station (7 in Fig. 2) to or from the plurality of devices (mobile repeater station) connected to the WLAN, said single apparatus including means for translating the data between a WLAN signaling protocol and a WLL signaling protocol (Fig. 2, 3 and column 5, lines 1 – column 6, lines 34, where teaches an antenna unit transmits/receives data signal to/from base station and communicates to the plurality mobile stations or fixed stations, and connects to WLL or WLAN protocol).

Regarding **claim 35**, Kojima and Diepstraten disclose the all the limitation, as discussed in claims 12 and 18. Furthermore, Kojima further discloses that the antenna

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unit applies received signals to a WLL transceiver and to the WLAN transceiver (Fig. 2, 3 and column 5, lines 1 – 64, where teaches an antenna unit receives/transmits the radio signal from/to plurality of WLAN terminals, and an antenna unit transmits/receives the radio signal to/from WLL base station, and the repeater inherently has a processor (main controller) and each of WLL transceiver section and WLAN transceiver section has a processing section for processing the signals).

4. **Claims 14, 16, and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima in view of Diepstraten and in further view of Archambaud et al. (US Patent number 6,304,560).

Regarding **claims 14, 16, and 19**, Kojima and Diepstraten do not specifically disclose the limitation “the WLL transceiver section and the WLAN transceiver section share one phase locked loop (PLL) using a plurality of distributors”. However, Archambaud discloses the limitation “the WLL transceiver section and the WLAN transceiver section share one phase locked loop (PLL) using a plurality of distributors” (Fig. 3, 6 and column 6, lines 18 – column 7, lines 30, where teaches WLL base station (repeater could same function as WLL base station) has a digital a phase lock loop operations for eliminating drift and providing synchronization). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Kojima and Diepstraten systems as taught by Archambaud. Doing so would enhance the signal adaptability and efficient adjustment for signal stability in wireless communication system.

Allowable Subject Matter

5. Claims 1-11, 33, and 34 are allowed.

Claims 1 –11, 33, and 34 are allowable over the prior art of record because a search does not detect the combined claimed elements as set forth in the claims 1 –11, 33, and 34.

As recited in independent claim 1, none of the prior art of record teaches or fairly suggests that a WLAN reception and transmission processing section adapted to receive the radio signal from the plurality of WLAN terminals and digital baseband processor, and perform a predetermined reception and transmission process for the received radio signal for application to the digital baseband processor of the WLL transceiver section and for radio transmission to WLAN terminals, a medium access controller (MAC) adapted to supply the signal applied thereto from the digital baseband processor to the WLAN transmission processing section or supply the signal applied thereto from the WLAN reception processing section to the digital baseband processor of the WLL transceiver section, and also, an antenna unit including a first antenna for receiving the radio signal from WLL base station and the first antenna for receiving the radio signal from one of the WLAN terminals, and antenna unit applying the received radio signal to the WLL transceiver section or the WLAN transceiver section, and together with combination of other elements as set forth in the claims 1 –11, 33, and 34. Therefore, claims 1 –11, 33, and 34 are allowable over the prior art of records.

6. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record fails to disclose “a duplexer adapted to apply a radio signal received by a first antenna to the WLL reception processing section or the WLAN reception processing section, a triplexer adapted to apply a radio signal received by a second antenna to the WLL reception processing section or apply a signal supplied thereto from the WLL transmission processing section or the WLAN transmission processing section to the second antenna ” as specified in the claims.

- 7 **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Conclusion

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
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Or P.O. Box 1450
Alexandria VA 22313

or faxed (703) 308-9051, (for formal communications intended for entry)

Or: (703) 308-6606 (for informal or draft communications, please label
"PROPOSED" or "DRAFT").

Hand-delivered responses should be brought to USPTO Headquarters,
Alexandria, VA.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John J. Lee** whose telephone number is **(571) 272-7880**. He can normally be reached Monday-Thursday and alternate Fridays from 8:30am-5:00 pm. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, **Nay Aung Maung**, can be reached on **(571) 272-7882**. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

J.L
June 21, 2005


NAY MAUNG
SUPERVISORY PATENT EXAMINER

John J Lee